

# Renyu (Philip) Zhang

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## CONTACT INFORMATION

Department of Decision Sciences and Managerial Economics  
CUHK Business School  
The Chinese University of Hong Kong  
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12 Chak Cheung Street  
Sha Tin, N.T., Hong Kong, China

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## EDUCATION

**Washington University in St. Louis, Olin Business School** St. Louis, MO  
Ph.D. Operations Management 05/2016

- Thesis: **Dynamic Pricing and Inventory Management: Theory and Applications**
- Advisors: Nan Yang, Fuqiang Zhang

**Peking University, School of Mathematical Sciences** Beijing, China  
B.S. Mathematics 07/2011

## ACADEMIC POSITION

**The Chinese University of Hong Kong, CUHK Business School** Hong Kong, China  
Associate Professor (*with tenure*) Since 09/2022  
Visiting Associate Professor 09/2021-08/2022

**New York University Shanghai** Shanghai, China  
Visiting Scholar Since 07/2022  
Assistant Professor of Operations Management 09/2016-06/2022  
NYU Global Network Assistant Professor 07/2017-06/2022

**New York University, Stern School of Business** New York, NY  
Visiting Assistant Professor of Operations Management 06/2017-06/2022

## NON-ACADEMIC POSITION

**Kwai** Beijing, China  
Economist & Tech Lead Since 12/2018

## RESEARCH INTERESTS

### Methodologies

Reinforcement learning; data-driven optimization; econometrics and causal inference; machine learning and deep learning.

### Applications

Online platforms and marketplaces; social networks; AI ethics; revenue management and pricing; inventory and supply chain management.

## PEER-REFEREED PUBLICATIONS

1. **Dynamic Pricing and Inventory Management under Inventory-Dependent Demand**, *Operations Research*, **62**(5), 2014, 1077-1094 (with Nan Yang).

2. **Dynamic Pricing and Inventory Management under Fluctuating Procurement Costs**, *Manufacturing & Service Operations Management*, **17**(3), 2015, 321-334 (with Guang Xiao and Nan Yang).
3. **Dynamic Supply Risk Management with Signal-Based Forecast Multi-Sourcing, and Discretionary Selling**, *Production and Operations Management*, **26**(7), 2017, 1399-1415 (with Long Gao, Nan Yang, and Ting Luo).
4. **Trade-in Remanufacturing, Customer Purchasing Behavior, and Government Policy**, *Manufacturing & Service Operations Management*, **20**(4), 2018, 601-616 (with Fuqiang Zhang).
  - Finalist award in the *POMS College of Supply Chain Management 2015 Best Student Paper Competition*
5. **Comparative Statics Analysis of An Inventory Management Model with Dynamic Pricing, Market Environment Fluctuation, and Delayed Differentiation**, *Production and Operations Management*, **31**(1), 2022, 341-357 (with Nan Yang).
6. **Carpool Services for Ride-sharing Platforms: Price and Welfare Implications** *Naval Research Logistics*, **69**(4), 2022, 550-565 (with Xuan Wang).
7. **Competition and Coopetition for Two-sided Platforms**, *Production and Operations Management*, **31**(5), 2022, 1997-2014 (with Maxime Cohen).
  - Honorable Mention award in the *INFORMS Service Science Section 2017 Best Cluster Paper Award*
8. **Dynamic Pricing and Inventory Management in the Presence of Online Reviews**, *Production and Operations Management*, **31**(8), 2022, 3180-3097 (with Nan Yang).
9. **Cold Start to Improve Market Thickness on Online Advertising Platforms: Data-Driven Algorithms and Field Experiments**, *Management Science*, forthcoming, 2022 (with Zikun Ye, Dennis Zhang, Heng Zhang, Xin Chen, and Zhiwei Xu).
  - Accepted at the 2022 *MSOM Service SIG Conference*
  - Finalist award in the *INFORMS Revenue Management and Pricing 2020 Student Paper Competition* (Primary Awardee: Zikun Ye)
10. **Data Aggregation and Demand Prediction**, *Operations Research*, **70**(5), 2022, 2597-2618 (with Maxime Cohen and Kevin Jiao).
  - Finalist award in the *INFORMS Data Mining Section 2019 Best Paper Award*
11. **The Impact of Social Nudges on User-Generated Content for Social Network Platforms**, *Management Science*, forthcoming, 2022 (with Zhiyu Zeng, Hengchen Dai, Dennis Zhang, Heng Zhang, Max Shen, and Zhiwei Xu).

- WORKING PAPERS
12. **Inventory Commitment and Monetary Compensation under Competition** (with Junfei Lei, Fuqiang Zhang, and Yugang Yu).
  13. **Online Advertisement Allocation under Customer Choices and Algorithmic Fairness** (with Xiaolong Li, Ying Rong, and Huan Zheng).
    - Accepted at the 2022 *MSOM Supply Chain Management SIG Conference*
  14. **Content Promotion for Online Content Platforms with Network Diffusion Effect** (with Yunduan Lin, Mengxin Wang, Max Shen, and Heng Zhang).
    - Winner of the *INFORMS Social Media Analytics 2022 Best Student Paper Award* (Primary Awardee: Yunduan Lin)
  15. **Dynamic Competition in Online Retailing: Implications of Network Effects** (with Zheyu Jiang and Nan Yang).
  16. **Nonprogressive Diffusion on Social Networks: Approximation and Applications** *Management Science* (with Yunduan Lin, Heng Zhang and Max Shen).
    - Winner of the *POMS-HK 2023 Best Student Paper Award Competition* (Primary Awardee:

Yunduan Lin)

17. **Deep Learning Based Causal Inference for Large-Scale Combinatorial Experiments: Theory and Empirical Evidence** (with Zikun Ye, Zhiqi Zhang, Dennis J. Zhang, and Heng Zhang).

- Accepted at the *ACM Conference on Economics and Computation (EC'23)*

BOOKS

18. *Demand Prediction in Retail - A Practical Guide to Leverage Data and Predictive Analytics*, Springer Series in Supply Chain Management, 2022 (with Maxime C. Cohen, Paul-Emile Gras, and Arthur Pentecoste).

SEMINARS AND  
CONFERENCE  
TALKS

- 2023 INFORMS, ASU Carey, HKU Business School, EC, RMP, Kwai, Miami Herbert, Tencent, NUS Business School, CUHK-SZ SME, Young Statistician Forum [**Video link**]
- 2022 CityU HK College of Business, Club Bear Online Seminar, NYU Shanghai, Academia Café Online Workshop, Tsinghua University SEM, PKU Guanghua, Analytics for X, CUHK Business School GRF/ECS Info-Sharing Session, NYU Stern, CUHK PhD Recruitment Workshop, RMP, West China Medical Center, Sichuan University School of Business, NUS Business School, NUS ISEM, U of Toronto Rotman
- 2021 NJU School of Management and Engineering, INFORMS, CSAMSE, Tsinghua University IE, MSOM, HKUST Business School
- 2020 CUHK Business School, DataFun Talk, Tsinghua University SEM, CUHK Shenzhen School of Data Science, HKU Business School, INFORMS, Sun Yat-sen University Lingnan College, Fudan University School of Management, NSFC PI Meeting, Sichuan University School of Business, NUS IORA [**Video link**], SJTU Antai, NYU Stern, Club Bear Online Seminar [**Video link**]
- 2019 INFORMS, UIC College of Business Administration, Data-Driven and Innovative Operations Workshop, POMS HK, Young Scholars' Forum on Management Science
- 2018 PKU Guanghua, Sun Yat-sen University Lingnan College, JHU Carey, NYU Stern, Operations Management under "Internet+" Environment Workshop, MSOM, RMP, Revenue Management Workshop, POMS, POMS HK, CUHK Business School
- 2017 Young Scholars' Forum on Management Science, Sichuan University School of Business, WUSTL Olin, INFORMS, HK PolyU Faculty of Business, CityU HK College of Business, HKUST Business School, NYU Stern, MSOM, SMU Lee Kong Chian School of Business, NUS Business School, USTC School of Management, POMS HK
- 2016 Southeast University School of Economics and Management, Tsinghua University SEM, SJTU Antai, U of Toronto Rotman, INFORMS, NJU School of Management and Engineering, Southwest University of Finance and Economics School of Business Administration, Southwest Jiaotong University School of Economics and Management, SUFE School of Business Administration, CSAMSE, RMP, POMS, NYU Shanghai, UTD Jindal, NYU Stern, CUHK SEEM, HKUST Business School, HKUST IELM, HK PolyU Faculty of Business, CityU HK College of Business
- 2015 DSI, INFORMS, MSOM, POMS
- 2014 INFORMS, MSOM
- 2013 INFORMS
- 2012 INFORMS

HONORS, AWARDS,  
AND GRANTS

1. Tencent Collaboration with University Fund, PI, RMB 332,310. 12/2022
2. Winner, *POMS-HK Best Student Paper Award* (Primary Awardee: Yunduan Lin). 01/2023
3. Winner, *INFORMS Social Media Analytics Best Student Paper Award* (Primary Awardee: Yunduan Lin). 10/2022

4. CUHK 'Improvement on Competitiveness in Hiring New Faculties' Funding Scheme, PI, HKD 1,500,000. 07/2022
5. Hong Kong Research Grants Council, General Research Fund 14502722, PI, HKD 629,325. 09/2022-08/2025
6. Finalist, *INFORMS Revenue Management and Pricing Student Paper Competition* (Primary Awardee: Zikun Ye). 10/2020
7. Finalist, *INFORMS Data Mining Section Best Paper Award*. 10/2019
8. Shanghai Eastern Scholar, Young Scientist Program QD2018053, PI, RMB 200,000/Year.01/2019-12/2021
9. National Natural Science Foundation of China, Young Scientist Program 71802133, PI, RMB 180,000. 01/2019-12/2021
10. Honorable Mention, *INFORMS Service Science Best Cluster Paper Award*. 10/2017
11. Shanghai Pujiang Talent Program 17PJC074, PI, RMB 100,000. 09/2017-08/2019
12. Finalist Award, *POMS College of Supply Chain Management Best Student Paper Competition*. 05/2015
13. First Prize Award, Chinese Mathematics Olympiad 10/2006

#### PHD STUDENT ADVISING

1. Kevin Jiao (Dissertation Committee, NYU Stern 2019, Initial Placement: FINRA).
2. Xiaolong Li (SJTU Antai 2019, Initial Placement: Post-Doc at NUS IORA).
3. Zikun Ye (UIUC IESE 2023, Initial Placement: Assistant Professor of Marketing, UW Foster).
4. Zhiyu Zeng (Dissertation Committee, Tsinghua IE 2023, Initial Placement: Post-Doc at WUSTL Olin).
5. Junfei Lei (UW Seattle Foster 2023, Initial Placement: Post-Doc at INSEAD).
6. Yunduan Lin (Berkeley IEOR Current Student).
7. Zhiqi Zhang (WUSTL Olin Current Student).
8. Zheyu Jiang (Dissertation Committee, Miami Herbert 2023, Initial Placement: Assistant Professor, NJU School of Management and Engineering).
9. Zihan Zhao (WUSTL Olin Current Student).
10. Yixin Zhu (CUHK Business School Current Student).
11. Qinlu Hu (CUHK Business School Current Student).

#### TEACHING EXPERIENCES

##### **The Chinese University of Hong Kong, CUHK Business School**

##### **Instructor**

- Artificial Intelligence for Business Research (PhD)
  - Spring 2024
- Artificial Intelligence for Business (EMBA)
  - Winter 2023
- Intelligent Business with Data Science (EMBA)
  - Winter 2022 (5.18/6)
- Business Intelligence Techniques and Applications (MS in Business Analytics)
  - Winter 2023, Winter 2022 (5.94/6, 5.89/6), Winter 2021 (5.95/6, 5.94/6)

- Web Analytics (MS in Business Analytics)
  - Winter 2023
- Business Analytics (Undergraduate)
  - Spring 2022 (5.33/6)

## **New York University Shanghai**

### **Instructor**

- Machine Learning for Business (MS in Data Analytics and Business Computing)
  - Summer 2021 (4.3/5), Summer 2020 (4.8/5)
- Business Analytics (Undergraduate)
  - Spring 2021 (4.9/5, 4.9/5), Spring 2019 (4.2/5, 4.8/5), Spring 2018 (4.4/5, 4.7/5)
- Operations Management (Undergraduate)
  - Spring 2019 (4.6/5), Fall 2017 (3.8/5), Spring 2017 (4.0/5), Fall 2016 (4.6/5)

### **Business Honors Thesis Advisor**

- Ziheng Wang (2021), Yiyi Zhang (2018), Yujia Ni (2018).

## **Kwai**

### **Internal Instructor**

- Introduction to Economics 08/2022-12/2022
- Data Driven Optimization 05/2020
- Operations Analytics 12/2018-05/2019

## **PROFESSIONAL SERVICES**

### **Journal Editor**

- Production and Operations Management*, Senior Editor. Since 09/2022
- Naval Research Logistics*, Associate Editor. Since 08/2022

### **Journal and Conference Referee**

*Management Science, Operations Research, Manufacturing & Service Operations Management, MSOM SIG Conference, Marketing Science, Mathematics of Operations Research, Production and Operations Management, Transportation Science, Transportation Research: Part B, Service Science, Naval Research Logistics, Decision Sciences, European Journal of Operations Research, Omega, Journal of Management Science and Engineering, Applied Mathematical Modeling, Operational Research: An International Journal.*

### **Service Awards**

*Manufacturing & Service Operations Management* Meritorious Service Award 2018, 2019, 2022

### **Professional Society Board**

- INFORMS Service Science Section Communication Editor. 01/2023-12/2024

### **Competition Judge**

- INFORMS Service Science Student Paper Competition (2022, 2023 Co-Chair).
- MSOM Student Paper Competition (2017, 2018, 2019, 2020, 2021, 2022, 2023).
- POMS College of Supply Chain Management Student Paper Competition (2020).
- CSAMSE Best Paper Competition (2021, 2022).

POMS International Conference China Best Paper Award (2022).  
 ISCOM Best Paper Competition (2021)

### Conference Committee and Session Chair

Session Chair:

- CSAMSE 2023, POMS-HK 2023, INFORMS 2020, INFORMS 2018, POMS 2018, POMS-HK 2018, POMS-HK 2017, CSAMSE 2016.

Sponsorships and Exhibits Committee member:

- POMS 2016.

### Professional Organization Membership

INFORMS, MSOM, RMP, POMS.

### Internal Services

CUHK Business School Faculty Impact Review Panel.	<i>Since</i> 01/2023
CUHK Business School Operations Management PhD Reading Session Organizer.	<i>Since</i> 09/2022
CUHK Business School DSE Department Name Change Task Force.	09/2022-06/2023
CUHK Business School IBBA Business Analytics Concentration Advisor.	<i>Since</i> 09/2022
CUHK Business School Curriculum Committee.	09/2021-08/2022
NYU Shanghai Business Honors Program Thesis Advisor.	09/2017-05/2021
NYU Shanghai Business Honors Program Guest Lecturer.	09/2016-11/2021
NYU Shanghai Dean's Undergraduate Research Fund Research Advisor.	03/2018-08/2022
NYU Shanghai Candidate Weekend Guest Instructor.	03/2018
NYU Shanghai Candidate Weekend Interviewer.	03/2019
NYU Shanghai MSDABC Program Admission Event Guest Speaker.	08/2020
NYU Shanghai Operations Management Reading Group Organizer.	03/2017-06/2019
NYU Shanghai Housing Subcommittee Member.	11/2016-05/2019
NYU Shanghai Business Research Seminar Coordinator.	09/2016-08/2017

### PERSONAL

Chinese citizen, Christian, married with one child.